

Kamas City

Transportation Master Plan



Draft REPORT
June 3, 2004

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Kamas City

Transportation Master Plan

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Table of Contents

1. Introduction

- 1.1. Background
- 1.2. Study Need
- 1.3. Study Purpose
- 1.4. Study Area
- 1.5. Study Process

2. Existing Conditions

- 2.1. Land Use
- 2.2. Environmental
- 2.3. Socio-Economic
- 2.4. Functional Street Classification
- 2.5. Bridges
- 2.6. Traffic Counts
- 2.7. Traffic Accidents
- 2.8. Bicycle and Pedestrian
 - 2.8.1. Biking/Trails
 - 2.8.2. Pedestrians
- 2.9. Public Transportation
- 2.10. Freight
- 2.11. Aviation Facilities and Operations
- 2.12. Revenue
 - 2.12.1. State Class B and C Program
 - 2.12.2. Federal Funds
 - 2.12.3. Local Funds
 - 2.11.4 Private Sources

3. Future Conditions

- 3.1. Land Use and Growth
 - 3.1.1. Population and Employment Forecasts
 - 3.1.2. Future Land Use

3.2. Traffic Forecast

4. Transportation Improvement Projects

4.1. Current State Transportation Improvement Program (STIP)

4.2. Recommended Projects

4.3. Revenue Summary

4.3.1. Federal and State Participation

4.3.2. City Participation

4.4. Other Potential Funding

5. Planning Issues and Guidelines

5.1. Guidelines and Policies

5.1.1. Access Management

5.1.1.1. Definition

5.1.1.2. Access Management Techniques

5.1.1.3. Where to Use Access Management

5.1.2. Context Sensitive Solutions

5.1.3. Recommended Roadway Cross Sections

5.2. Bicycles and Pedestrians

5.2.1. Bicycles/Trails

5.2.2. Pedestrians

5.3. Enhancement Program

5.4. Transportation Corridor Preservation

5.4.1. Definition

5.4.2. Corridor Preservation Techniques

5.5.2.1 Acquisition

5.5.2.2 Exercise of Police Powers

5.5.2.3 Voluntary Agreements and Governmental Inducements

1. Introduction

1.1. Background

One of the earliest descriptions of the Kamas Valley was given in the report written in 1849 by Captain Howard Stansbury of the United States Army Corps of Topographical Engineers. He wrote: "It may be remarked here that the Camass Prairie consists of most excellent land and can be irrigated over its whole extent with comparatively little labor. Water for stock is abundant and timber for ordinary farming is plentiful and convenient."

The word "Kamas" was derived from an Indian word for a bulbous plant that was a staple of the diet of Native Americans in the area. The word was also said to describe a small grassy plain among the hills, an appropriate portrait of the Kamas Valley.

Kamas is located about eighteen miles east of Park City and about forty-six miles southeast of Salt Lake City in a valley surrounded by the Uinta Mountains to the east, the Wasatch Mountains to the west, the Provo River on the south, and the Weber River to the north. Beaver Creek, a tributary of the Weber, traverses the center of the valley.

Kamas was first known as "Rhoades Valley," named for Thomas Rhoades, the owner of the original territorial land grant. Rhoades first came to the valley in 1859 with about twenty other Mormons including W.O. Anderson, John Turnbow, John Simpson, Morgan Lewis, Daniel Lewis, Alma Williams, Clinton Williams, Richard Venable, Richard Pangburn, John Lambert, and their families. The group clustered together in a fort near a spring on the east side of the valley for the first several years. The log fort was sixteen feet high and the fort walls formed the backs of the houses. Before the group vacated the fort, thirty-two families had lived in it. A log building in the fort's center was used as a schoolhouse, meetinghouse, amusement hall, and center of government. Before the land was surveyed and divided into town lots between 1869 and 1870, squatter's rights prevailed. The town was incorporated in 1912; one of the town's first orders of business was the election of James Orlan Pack as mayor. Religion played a key role in Kamas's development. Many early town leaders were also ecclesiastical leaders of some prominence. Brigham Young appointed Captain Charles Russell the first presiding elder of Rhoades Valley and the southern part of the area that would eventually become LDS Summit Stake. After Russell moved from the area in 1867, Young appointed Ward E. Pack in his place. Over the next four decades several members of the Pack family served as bishops of the Kamas LDS Ward.

Easy access to nearby mountains made lumbering a natural local industry. Settlers cut and hauled logs to Salt Lake City to trade for provisions; the trip usually took at least four days. John Pack built the first local sawmill in 1860 on Beaver Creek a few miles east of Kamas. Richard Pangburn built a shingle mill near the town site as well. Kamas is still known for its wood mills. Another early industry that distinguished Kamas Valley was dairying. John Pack established the valley's first cheese factory in 1868, and Kamas is even today identified as one of the finest dairy sections in the state. Its fertile land is also used for stock raising. Agriculture is facilitated by this

excellent soil, the climate, and an abundance of water.

Over the years Kamas has had a number of local businesses, including mercantile and banking institutions. It also has kept pace with other Summit County towns in providing modern services. In 1916 George W. Butler installed an independent electric lighting system. Telephones, modern water systems, and improved roads came to Kamas during the first decade of the twentieth century.

In addition to the stock, dairy, and lumber industries, Kamas has been for a number of years the headquarters of the Wasatch National Forest and plays an important role as a supply station for those hiking or camping in the nearby Uinta Mountains and the Granddaddy Lake region. Thousands of visitors travel through Kamas each year en route to the mountains. Also a popular attraction is Kamas's annual Twenty-Fourth of July rodeo, an event which gives local cowboys a chance to show their skill before enthusiastic crowds.

This information was provided from www.onlineutah.com, in an article written by Martha Sonntag Bradley.

1.2. Study Need

The City of Kamas has seen a 20.8% population increase within the last decade as compared to a -0.28 % population decrease the decade before. Population in Kamas city has gone through cyclical changes, but the overall trend shows very small long-term changes to the population. The population of the town in 2000 was 1,274. Although city population growth has been small in recent years, potential residential development and expanding opportunities as both a summer and winter recreational gateway may stimulate future growth in this area. A well-established transportation plan is needed to provide direction for continual maintenance and improvements to Kamas City's transportation system.



Kamas City has an adopted General Plan. The Kamas City General Plan briefly describes the transportation needs of this area. As the Kamas transportation infrastructure requires maintenance and system improvements, a more extensive transportation plan is necessary for Kamas City and the surrounding area.

Some of the major transportation issues around the state are as follows:

- 1 Safety
- 2 Trails (bicycle, pedestrian, & OHV)
- 3 Signals
- 4 City interchange aesthetics

- 5 Connectivity of roadways
- 6 Property access
- 7 Truck traffic
- 8 Speed limits

Kamas City recognizes the importance of building and maintaining safe roadways, not only for the auto traffic but also for pedestrians and bicyclists.

1.3. Study Purpose

The purpose of this study is to develop a transportation master plan for Kamas and evaluate the influence of the plan on the surrounding areas. This plan should be adopted by Kamas as a companion document to the city's General Plan.

The primary objective of the study is to establish a solid transportation master plan to guide future developments and roadway expenditures. The plan includes two major components:

- 1 Short-range action plan
- 2 Long-range transportation plan

Short-range improvements focus on specific near term projects to improve deficiencies in the existing transportation system. The long-range plan will identify those projects that require significant advance planning and funding to implement and are needed to accommodate future traffic demand within the study area.

Finally, with transportation master plan in place, Kamas may qualify for preferred access to grants from state agencies working with the Utah Quality Growth Commission.

1.4. Study Area

The study area includes Kamas, and adjacent land in Summit County. A general location map is shown in Figure 1. A more detailed map of the study area and city limits is shown in Figure 2. The study area was developed by Kamas and approved by the Kamas Transportation Master Plan Technical Advisory Committee.

The roadway network within the study area includes SR-32, SR-150, and SR-248, all bordering the Kamas Business Area. Each of these roads provides a vital function to Kamas City and to the rest of Summit County and the State. SR-150, a minor collector, provides the only access to winter sports activities including OHV's, cross country skiers, snowshoe and snowboard enthusiasts along the Mirror Lake Highway and access to many summer activities. This highway is used both summer and winter by recreational and tourist vehicles. SR-32 and SR-248 are minor arterials that carry volumes of through traffic. SR-248 via SR-32 (Center Street) carries Kamas area commuters to nearby communities and to metropolitan areas via US-40 and Interstate-80 for business and commerce. These roadways along with the local road network are shown in Figure 2.

1.5. Study Process

The study, which began in June of 2004, is proceeding as a cooperative effort between Kamas City, UDOT, and local community members. It is being conducted under the guidance of Kamas City Officials. The following individuals participated in the initial meetings to provide input used to create this document. This group listed below will be referred to as the Technical Advisory Committee or “TAC” for this document.



Lewis Marchant --
Rod Smith --
Jackie Blazzard --
Jack Walkenhorst --
Lorrie Sargent --
Janet Atkinson --
Errik Ovard --
Scott Mark --
Sherrie Christenson
Gary Siddoway --
Scott Kettle (Horrocks Engineers)
Paula Trater --
Tyler Page --

Mayor
City Council
Planning Commission
Local Business
Local Business
Local Business/Fire Station
Police Chief
Policeman
City Planner
Public Works Director
City Engineer
Local Resident
Kamas Maintenance
Manager (UDOT)

Figure 1: Kamas Study Area Location

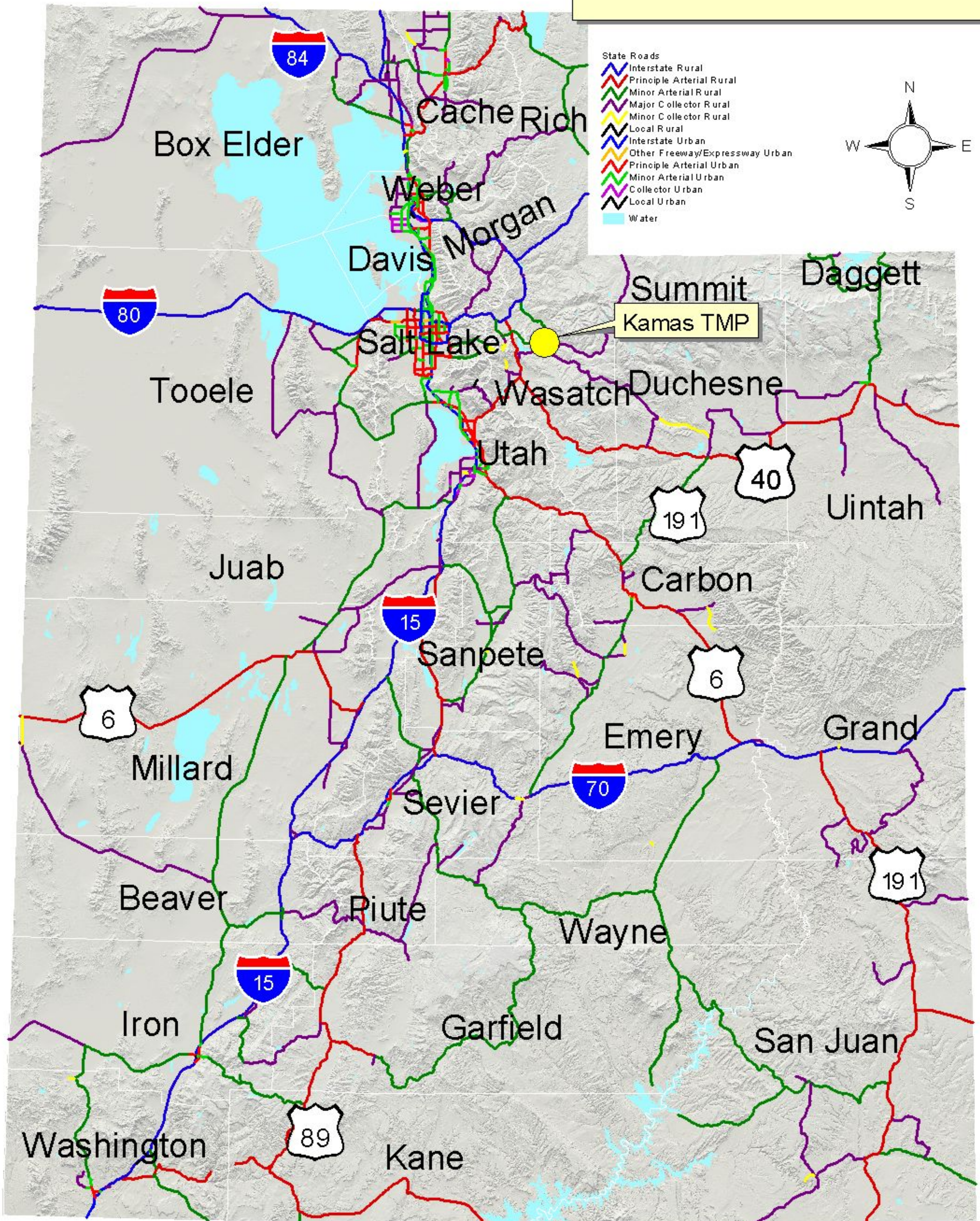
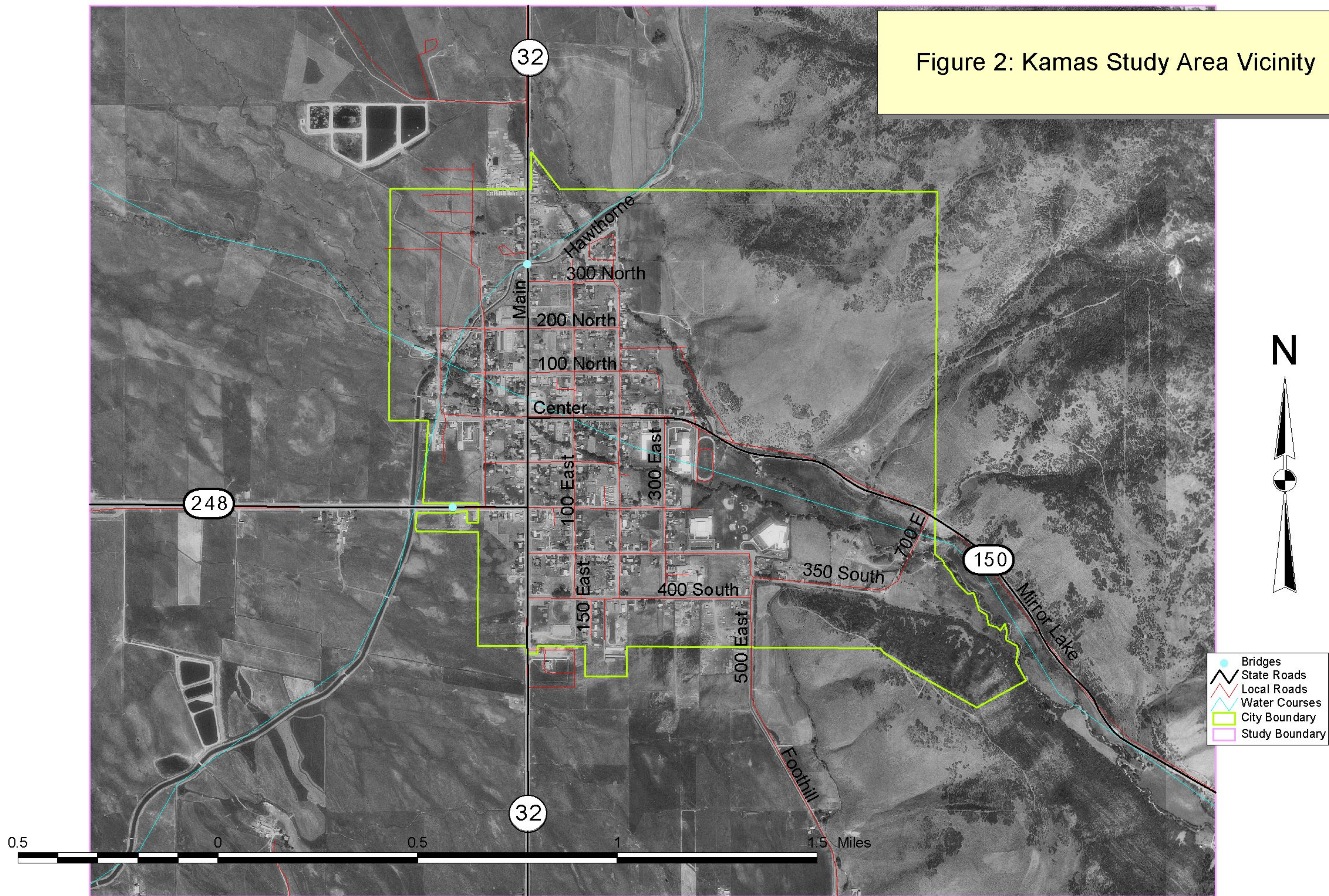


Figure 2: Kamas Study Area Vicinity



The study process for the Kamas Area Transportation Master Plan includes three basic process segments: (1) inventory of existing and future needs, (2) analyze and prioritize current and future needs and conditions, and (3) develop the area transportation master plan. The goal of this process is to identify the needs, opportunities, and constraints for establishing and implementing a transportation master plan. This process utilizes the TAC for direction, review, evaluation and prioritization in developing the transportation plans.

The initial UDOT components of the study evaluate the existing traffic, infrastructure, population, and employment conditions. Evaluation of existing conditions provides a basis for the analysis of future conditions. The second component of the study process forecasts future development of Kamas. Both population and employment forecasts are developed for the short term and long term planning years.

The TAC evaluates each part of the study process. The location and concept of projects are developed from TAC input. Their comments are incorporated into the study's draft final report. The remainder of the draft final report focuses on the recommendation portion of the transportation plan. Transportation projects recommended for both the short-term and long-range needs are included based on the TAC's recommendations and concurrence.

The study process allows for the solicitation of input from the public at two evening TAC meetings. The first TAC meeting includes needs identification and the second meeting includes priority identification. This public participation element is included in the study process to ensure that any decisions made regarding this study are acceptable to the community.

The TAC is expected to recommend those comments to be incorporated into this report as applicable to the goals of this study. The draft final report and the final report is submitted via the Mayor's Office to the TAC for review, comment and approval.

Upon TAC approval of the draft report, the UDOT Planning Section staff prepares and submits the final report to the Mayor and City Council of Kamas for approval. This final report describes the study process, findings and conclusions, and documents the analysis of the recommended transportation system projects and improvements.

2. Existing Conditions

An inventory and evaluation of existing conditions within the study area was conducted to identify existing transportation problems or issues. The results of the investigation follow.

2.1. Land Use

In order to analyze and forecast traffic volumes, it is essential to understand the land use patterns within the study area. Chapter 2 of Kamas City General Plan outlines land use classifications and annexation plans. Much of the City is zoned Residential, but there are also many issues dealing with commercial and industrial properties. By analyzing the patterns or changes in land use, we can better predict the ever-changing transportation needs.



The Kamas City Zoning map follows on the next page.

2.2. Environmental

In Utah there are a variety of local environmental issues. Each of the cities and counties need to look at what are the environmental issues in their areas on a case-by-case basis. There are many resources that can help local entities to determine what issues need to be addressed and how any problems that may exist can be resolved.

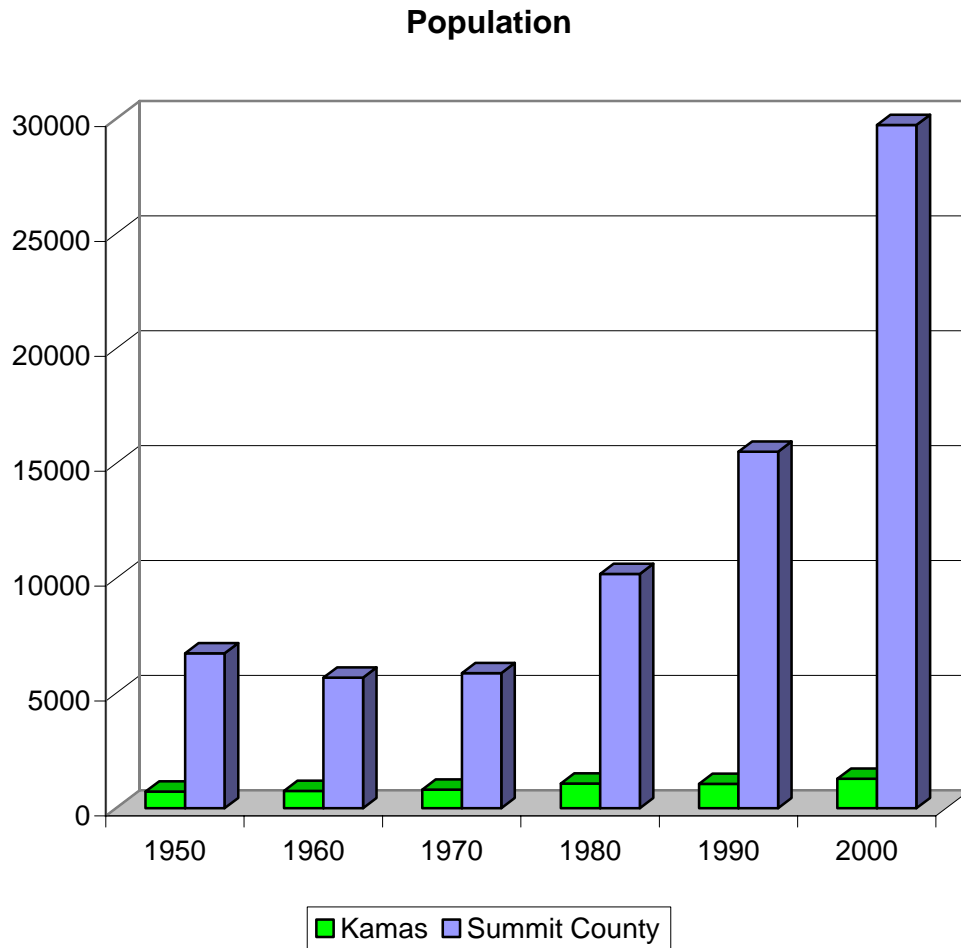
Some of the environmental concerns around the State are wetlands, endangered species, archeological sites, and geological sites among other issues. Environmental concerns will be addressed when looking at an area for any type of improvement to the transportation system. Specific issues mentioned in the Kamas City General Plan are hillside erosion, wetlands, and air quality. Specific issues mentioned by the TAC for inclusion in this TMP are drainage problems both on and off streets, walkways, yards and in fields. Protecting the wetlands environment is a critical part of the transportation planning process while also enhancing the community livability.

2.3. Socio-Economic (Census Brief: Cities and Counties of Utah, May 2001)

Kamas City ranks 125th for population in the State of Utah out of 235 incorporated cities and towns listed. Historical growth rates have been identified for this study, because past growth is usually a good indicator of what might occur in the future. Figure 4 identifies the population growth over the past 50 years for the State of Utah, Summit County and Kamas. Figure 5 identifies that population change in Kamas has ranged from minus 0.28% between 1980 and 1990 to gaining 32.01% between 1970 and 1980, while growth in the State has gained between 18 and 38 percent during the past 50 years.

Figure 4. Population Data

Year	Population		
	Utah	Summit County	Kamas City
1950	688,862	6,745	721
1960	890,627	5,673	749
1970	1,059,273	5,879	806
1980	1,461,037	10,198	1,064
1990	1,722,850	15,518	1,061
2000	2,233,169	29,736	1,274



Source: U.S. Bureau of the Census

<http://www.governor.utah.gov/dea/OtherPublications.html>

Figure 6 identifies yearly population growth rates for the State of Utah and Summit County.

Though the State population has grown every decade from 1950 until 2000, Summit County had mild negative change in population from 1950 to 1960 of 15.89% but has shown positive growth every decade since.

Kamas has some unique demographic characteristics when compared with the State, particularly with age demographics. In the 25 to 54-age category, the State is at 38.6% the County is at 49.6% and the City is at 39.9%. For the 65+-age category, the State is at 8.5%, the County is at 4.9% and the City is at almost 3.8%. The State's median age is 27.1 years and the County's median age is 33.3 years, City's median age is 29.8 years. Another interesting statistic is that of Veteran status with State at 10.7%, County at 10.0%, and Kamas at 8.1%.

The 2000 median household income in Kamas is \$41,667, compared to the State median household income of \$45,726.

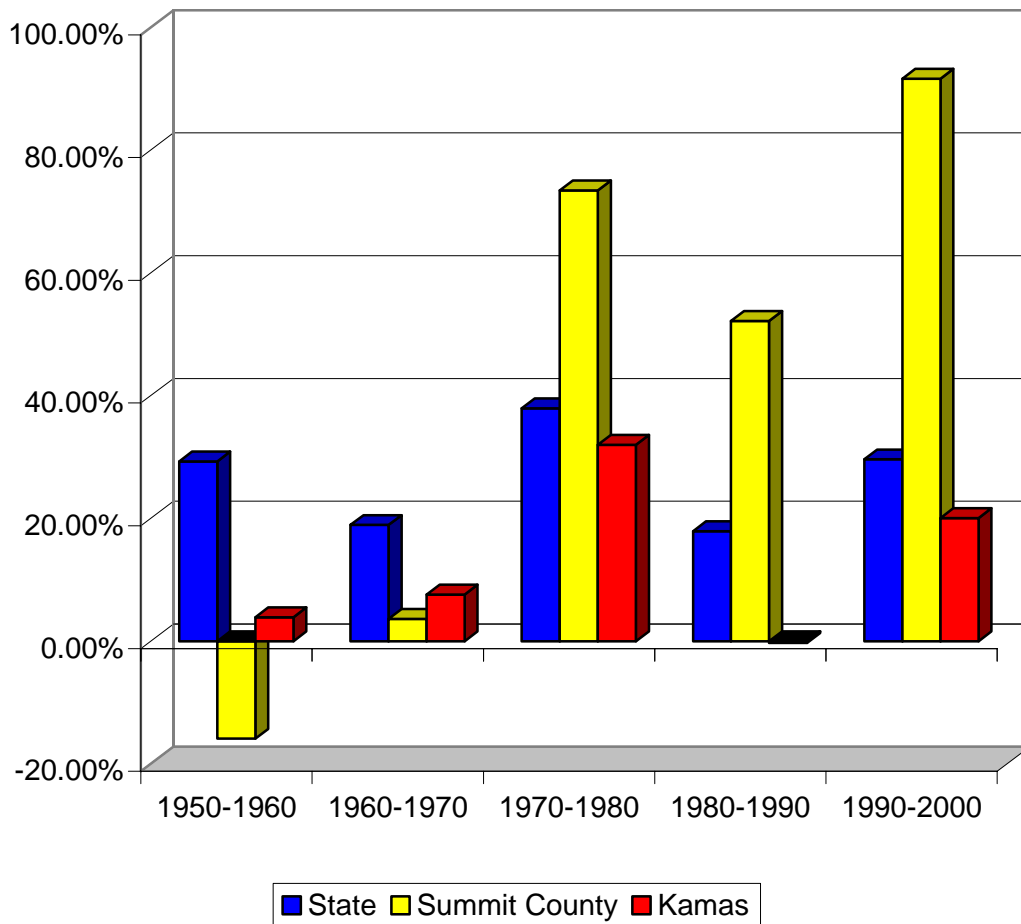
The unemployment rate in Kamas was 2.8 percent in 2000. While the unemployment rate is currently lower than the State of Utah, Kamas has had higher fluctuations than the State historically. According to the Utah Department of Employment Security (UDES), in 2000 there were approximately 622 employed people in Kamas or 73.4% of the population. The city has 25 unemployed people, which is 2.8% of the population. There are 16,557 employed people in Summit County or 75.5% percent of the population. The county has 478 people unemployed, which is 2.2% of the population.

The majority of employees in Summit County work in three primary employment sectors: Services, Trade and Government as shown in Figure 8. In the county, these sectors make up 51.9% of the labor force. Another interesting note was that housing built from 1990-2000 were 26.8% of total for Kamas compared to 25% for the state. Also homes built before 1939 were 19.8% of the total for Kamas City with 10% for the state.

Figure 5. Population Change Data

Decade	State of Utah	Summit County	Kamas
1950-1960	29.29%	-15.89%	3.88%
1960-1970	18.94%	3.63%	7.61%
1970-1980	37.93%	73.46%	32.01%
1980-1990	17.92%	52.17%	-0.28%
1990-2000	29.62%	91.62%	20.08%

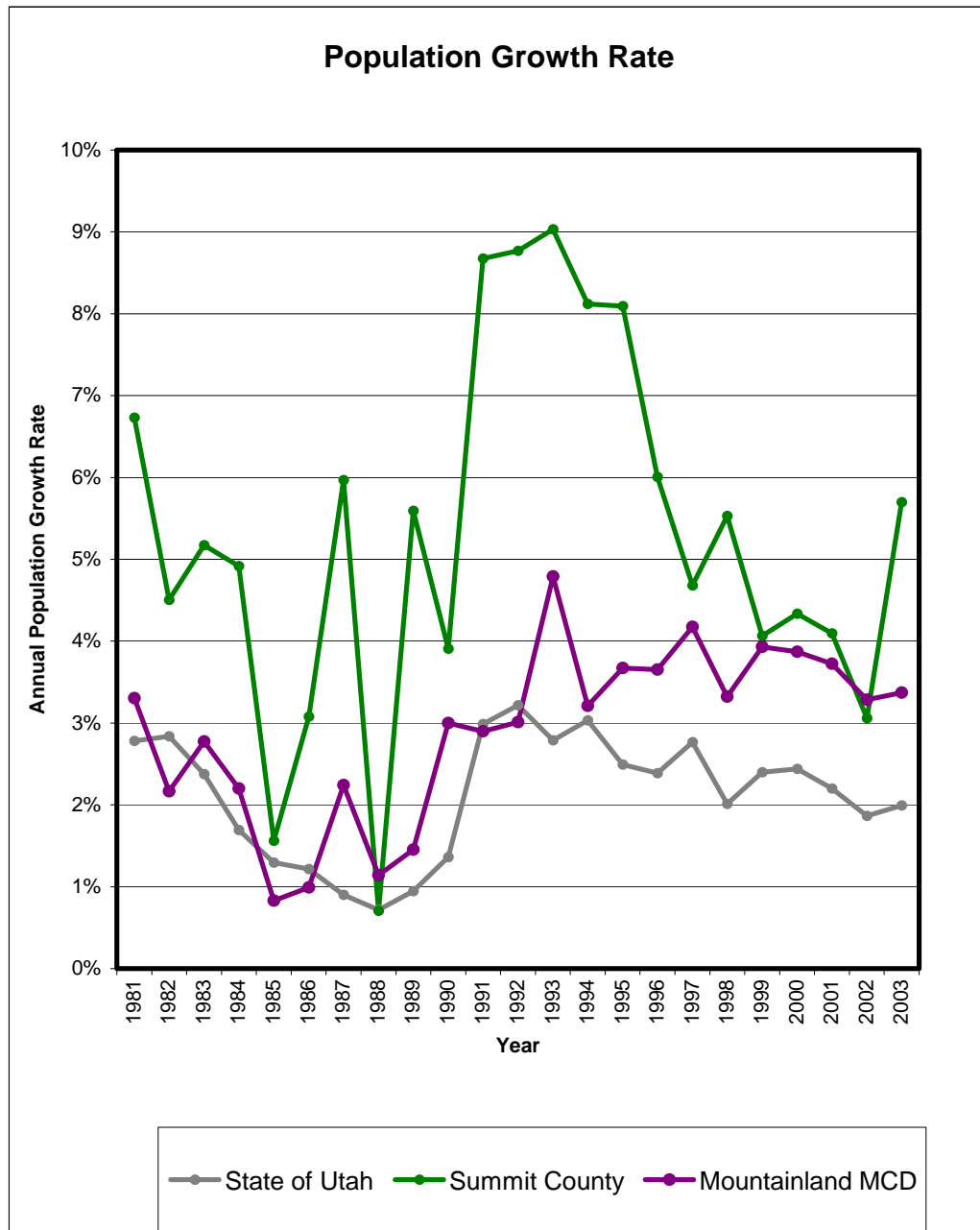
Decenial Population Change



Source Data: U.S. Bureau of the Census

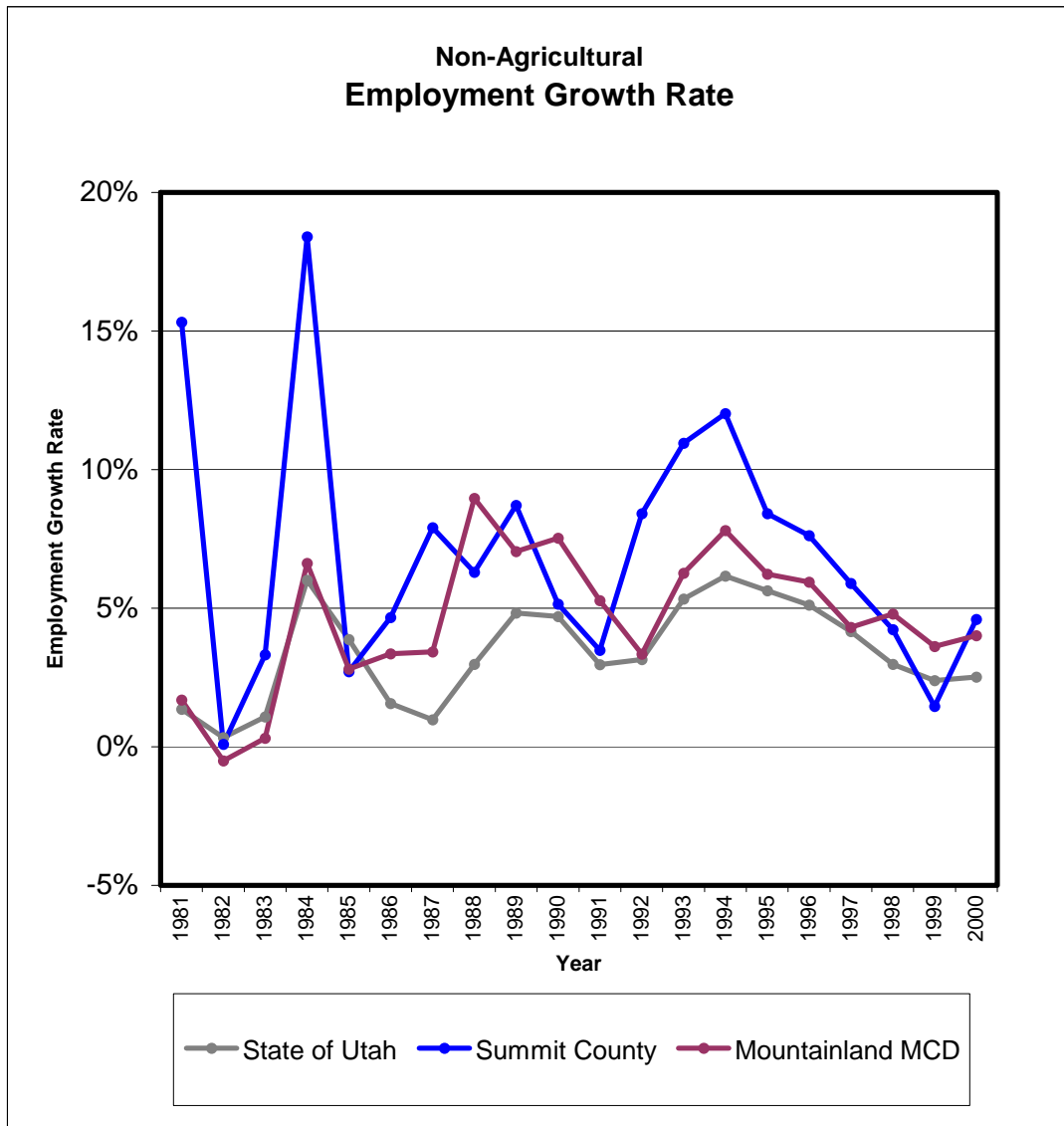
<http://www.governor.utah./dea/OtherPublications.html>

Figure 6. Population Growth Rate (1980-2000)



Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea>

Figure 7. Employment Growth Rate (1980-2000)



Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea>

Figure 8. Employment Sectors (1980-2000)

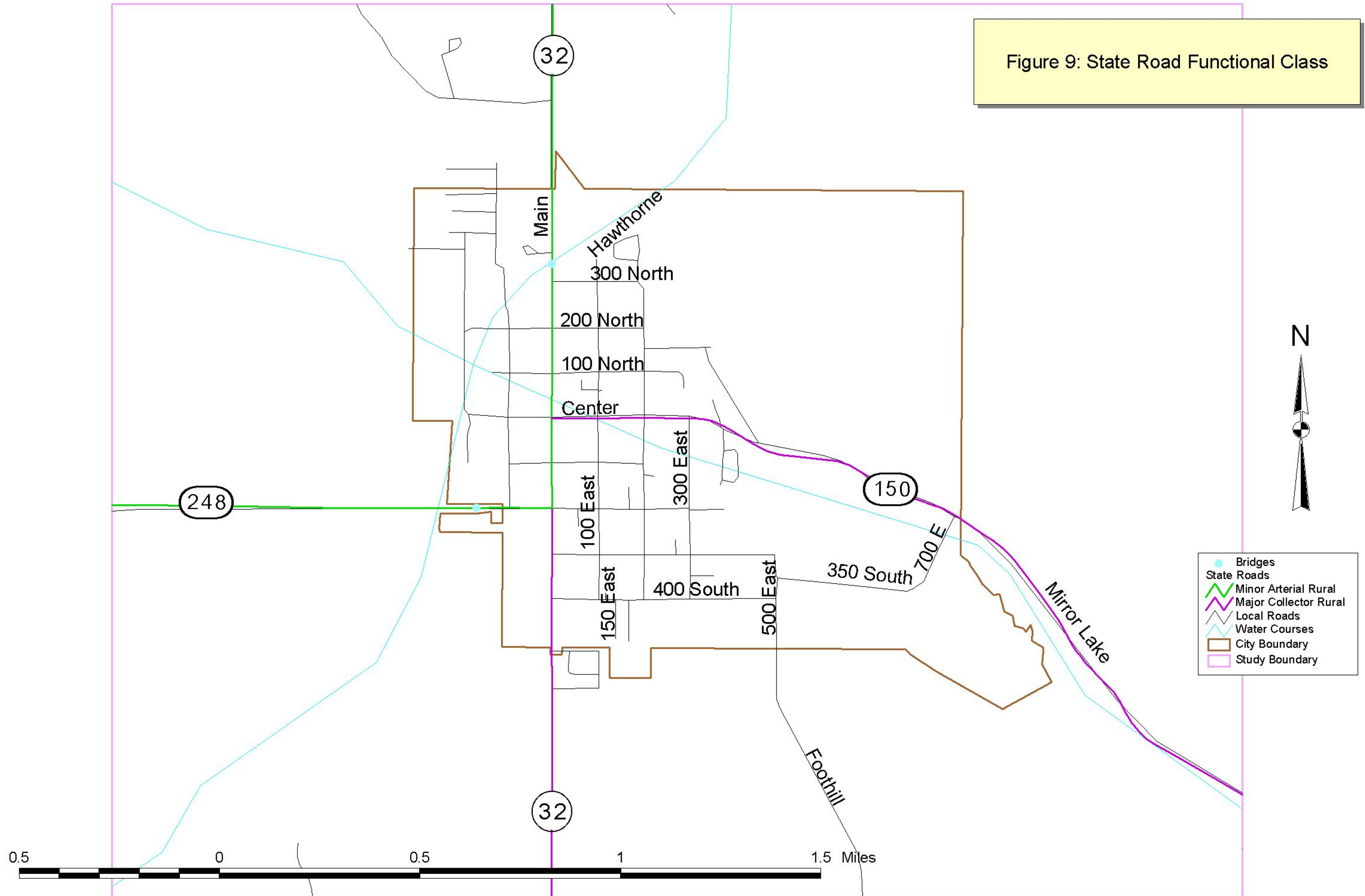
Sector	1980	1990	2000	$\Delta\%$ 1980-2000
Construction	5.28%	3.36%	5.45%	331.16%
FIRE	4.18%	9.09%	4.62%	362.34%
Government	10.73%	9.71%	8.76%	241.32%
Manufacturing	3.73%	3.66%	2.62%	194.17%
Mining	11.09%	0.97%	0.33%	-87.60%
Services	15.52%	24.43%	23.49%	532.87%
TCPU	2.50%	2.33%	1.38%	131.88%
Trade	19.61%	17.24%	19.65%	318.91%

FIRE = Financial, Insurance & Real Estate
 TCPU = Telecommunications & Public Utilities



Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea/HistoricalData.html>

Figure 9: State Road Functional Class



2.4. Functional Street Classification

This document identifies the current function and operational characteristics of the selected roadway network of Kamas. Functional street classification is a subjective means to identify how a roadway functions and operates when a combination of the roadway's characteristics are evaluated. These characteristics include; roadway configuration, right-of-way, traffic volume, carrying capacity, property access, speed limit, roadway spacing, and length of trips using the roadway.

The primary classifications used in classifying selected roadways of Kamas are: **Interstate, Principle Arterial, Minor Arterial, Major Collector, Minor Collector and Local**. An Arterial's function is to provide traffic mobility at higher speeds with limited property access. Traffic from the local roads is gathered by the Collector system, which provides a balance between mobility and property access trips. Local streets and roads serve property access based trips and these trips are generally shorter in length.

The Kamas area is accessed by SR-32 to I-80 and I-84; SR-248 to US-40; and SR-150 East to High Uintas Wilderness Area. The functionally classified system is currently being revised statewide. The current functionally classified system generally defines the higher traffic roads, so only minor additions or changes will be required.

Figure 9. Existing State Route Functional Street Classification

2.5 Bridges

There are 2 bridges on the state system located in the study area that could be eligible for federal bridge maintenance, rehabilitation, or replacement funds. Bridges are maintained and minor repairs made with maintenance funds. A bridge is rehabilitated or replaced as it deteriorates over time and as traffic volumes increase.

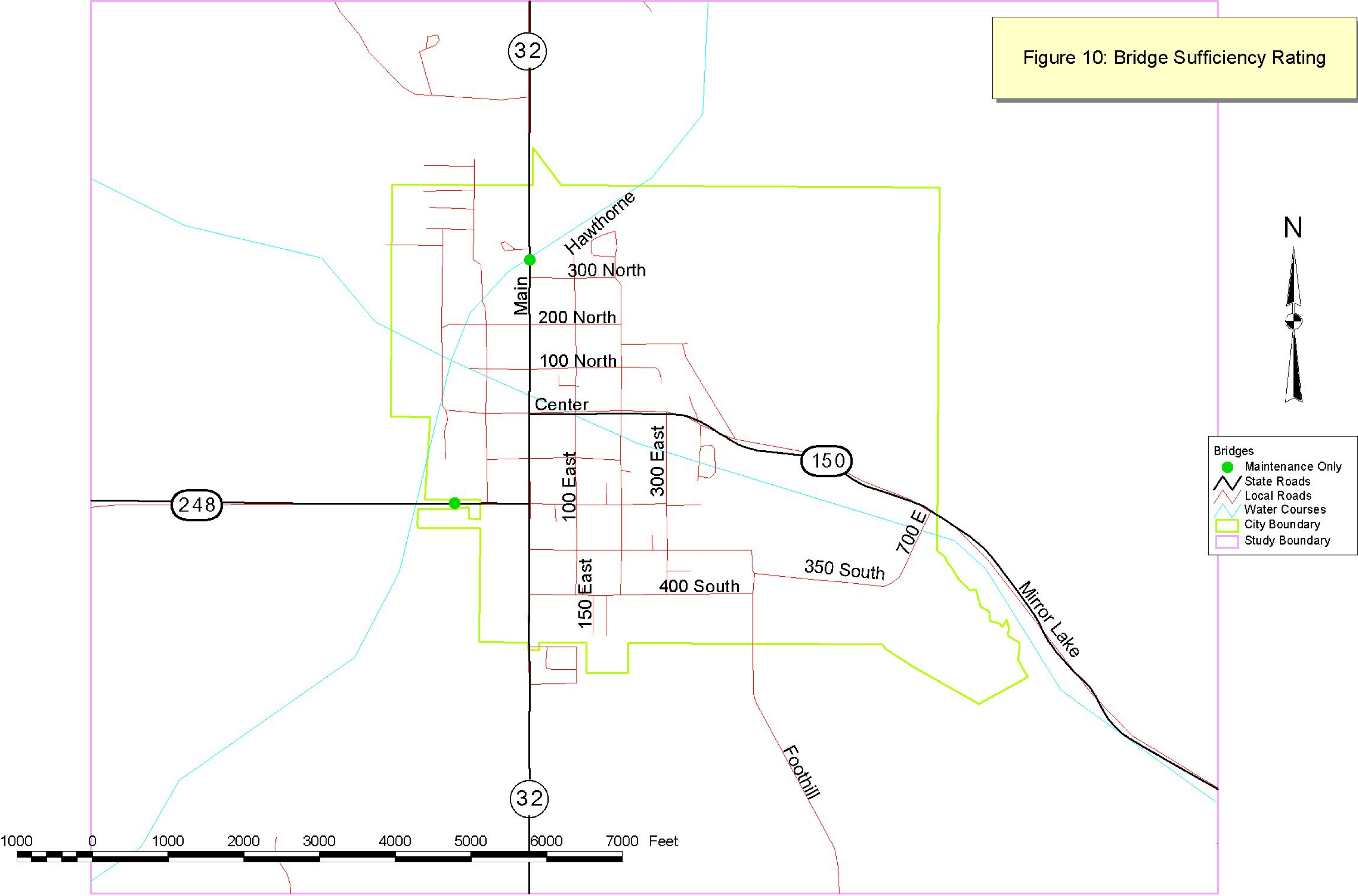
Table 1 compares the bridges in the study area and identifies their sufficiency rating and location.



Table 1. Bridges

Number	Location	Maximum Span	No. Lanes & Road Width	Sidewalk	Sufficiency Rating
OE-719	SR-32 .6 Mile	6.7 M	2 Lanes	Yes	100

Figure 10: Bridge Sufficiency Rating



	North of Kamas				
OC-751	SR-248 .5 Mile West of Kamas	18.9 M	2 Lanes	Yes	96.9

Source: Utah Department of Transportation/Structures Division

2.6 Traffic Counts

Recent average daily traffic count data were obtained from UDOT. Table 2 shows the traffic count data on the key roadways of the study area. The number of vehicles in both directions that pass over a given segment of roadway in a 24-hour period is referred to as the average annual daily traffic (AADT) for that segment.

Table 2. Average Annual Daily Traffic

Road	Segment	Year	AADT
SR-32	Junction SR-248	2002	4,955
SR-32	Junction SR-150 in Kamas	2002	5,920
SR-150	East Incorporated Limits Kamas	2002	2,210
SR-248	Wasatch/Summit County Line to SR-32	2002	4,585

Source: Utah Department of Transportation

**INCL=Incorporated City Limits*

These are averages for the entire year. Kamas experiences a significant increase in traffic during the summer months. UDOT maintains 86 continuously operated automatic traffic recorders (ATR) throughout the state highway system. ATRs collect data continuously throughout the year in order to determine monthly, weekly, daily, and hourly traffic patterns. One ATR is located in the study area on SR-248. The following points summarize the 2003 data from the ATR located on SR-248 0.5 miles west of SR-40.

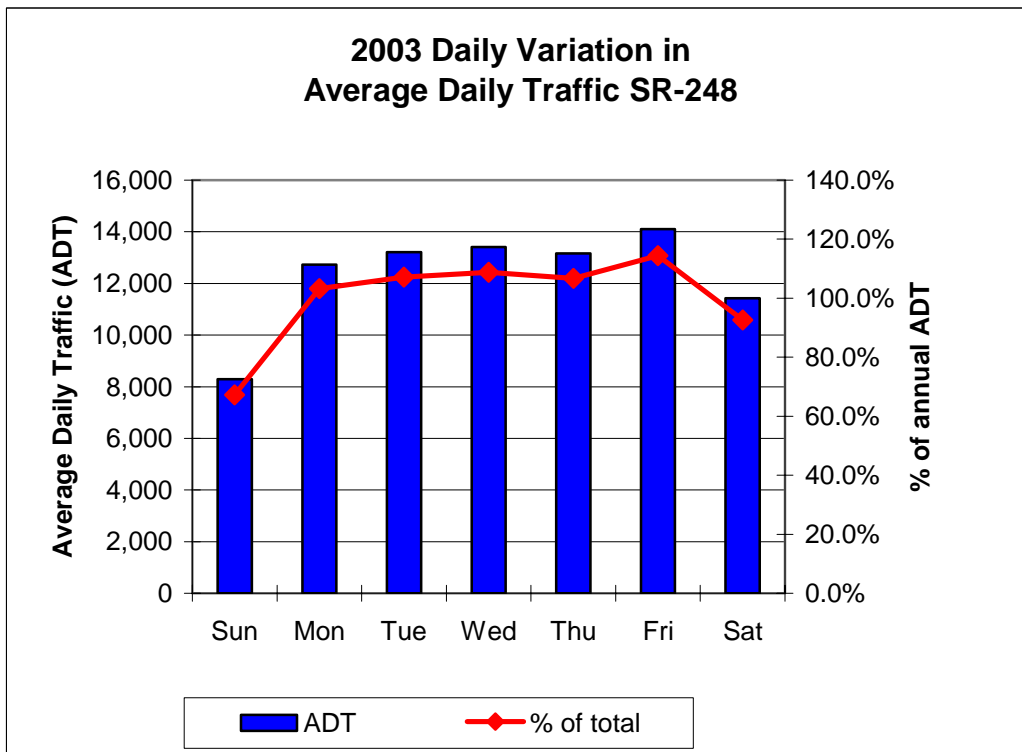
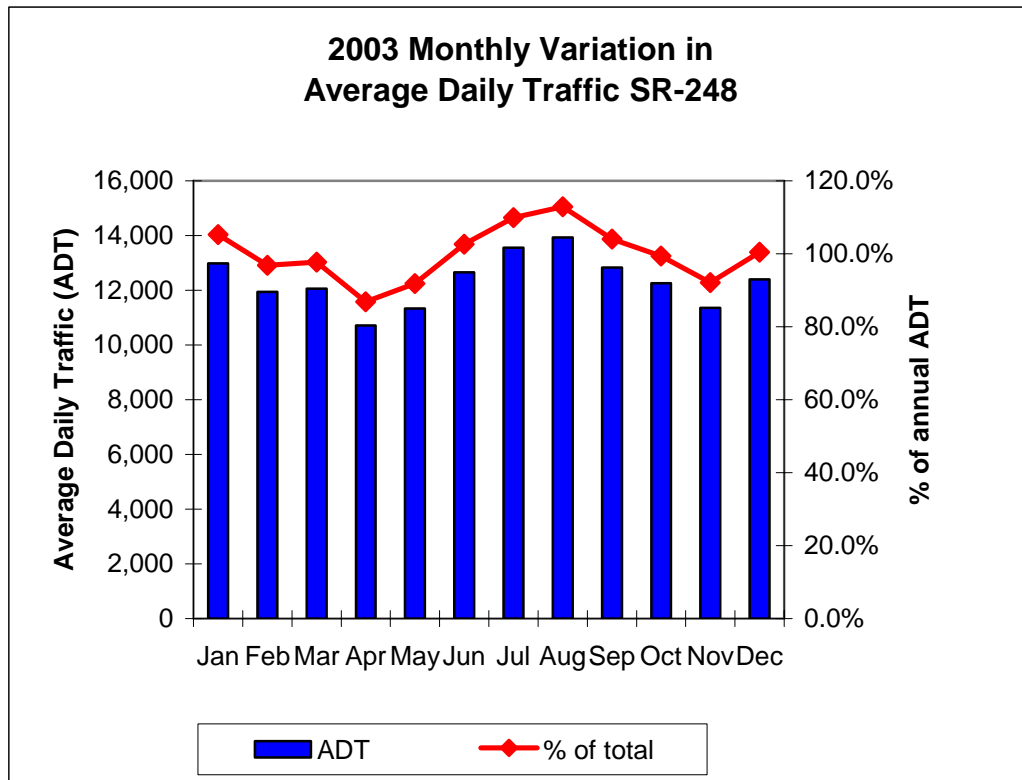
- 1 August was the highest volume month.
- 2 April was the lowest volume month.
- 3 The highest daily volumes occurred on Friday.
- 4 The lowest daily volumes occurred on Sunday.

The peak month of August is consistent with a recreational usage for higher elevations. The recreational season appears to be from June to October.

The hourly traffic shows a clear average peak hour of around 3:00 TO 5:00 pm. This is consistent with an afternoon commuter peak.

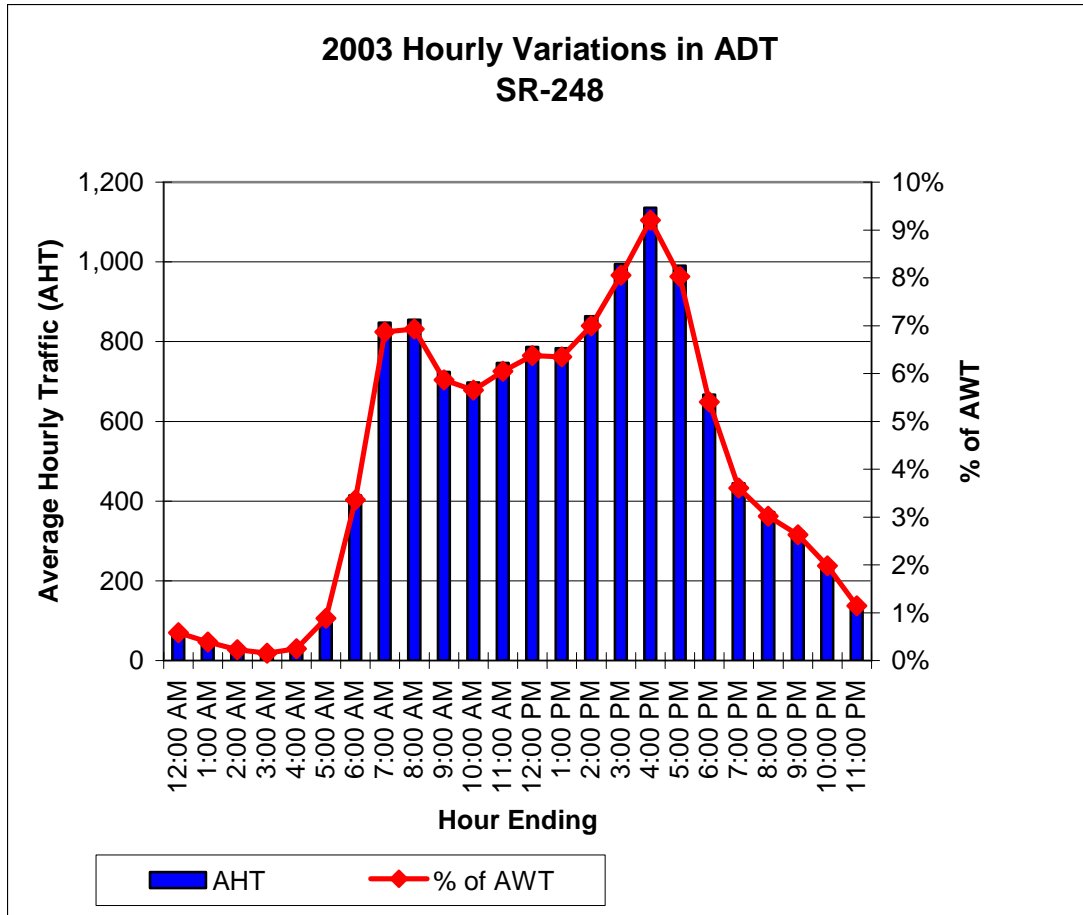
A map illustrating existing and future traffic, and roadway capacities is presented in the Traffic Forecast section 3.2.

Figure 10 Monthly and Daily ADT on SR-248



Source: Utah Department of Transportation

Figure 12 Hourly Variations on SR-248



Source: Utah Department of Transportation

2.7 Traffic Accidents

Traffic accident data was obtained from UDOT's database of reported accidents from 2002.—Table 3 summarizes the accident statistics for those segments for the year 2002. Additional information includes the average daily traffic, the number of reported accidents, and the accident rates. The roadway segment accident rates were determined in terms of accidents per million vehicle miles traveled. The crash rates for each roadway segment are compared to the expected crash rate for similar facilities across the state.

Upon review of the accident data for the state system, there appears to be higher than expected accident rates on SR-32 and SR-150 in the downtown area. The remainder of the state system shows a near expected to lower than expected accident rates. Figure 13 shows various segments of the state highway system and associated accident data.

Kamas City may wish to review the accident history for the local street system to identify any specific accident hot spot locations.

Table 3. Crash Data 2002

Road	From Milepost	End Milepost	ADT (2002)	# Crashes (2002)	Crash Rate	
					Actual	Expected*
SR-32	11	12	3,385	1	0.95	2.28
SR-32	12.01	12.62	4,955	5	4.80	1.88
SR-32	12.63	13.2	5,920	1	0.86	1.98
SR-32	13.21	14.5	3,895	2	1.15	1.88
SR-150	0	1.06	2,210	2	2.11	2.53
SR-150	1.07	3	1,520	5	5.55	2.53
SR-248	12.5	14.45	4,585	4	1.38	1.88

* Statewide average accident rates for functional class and volume group.

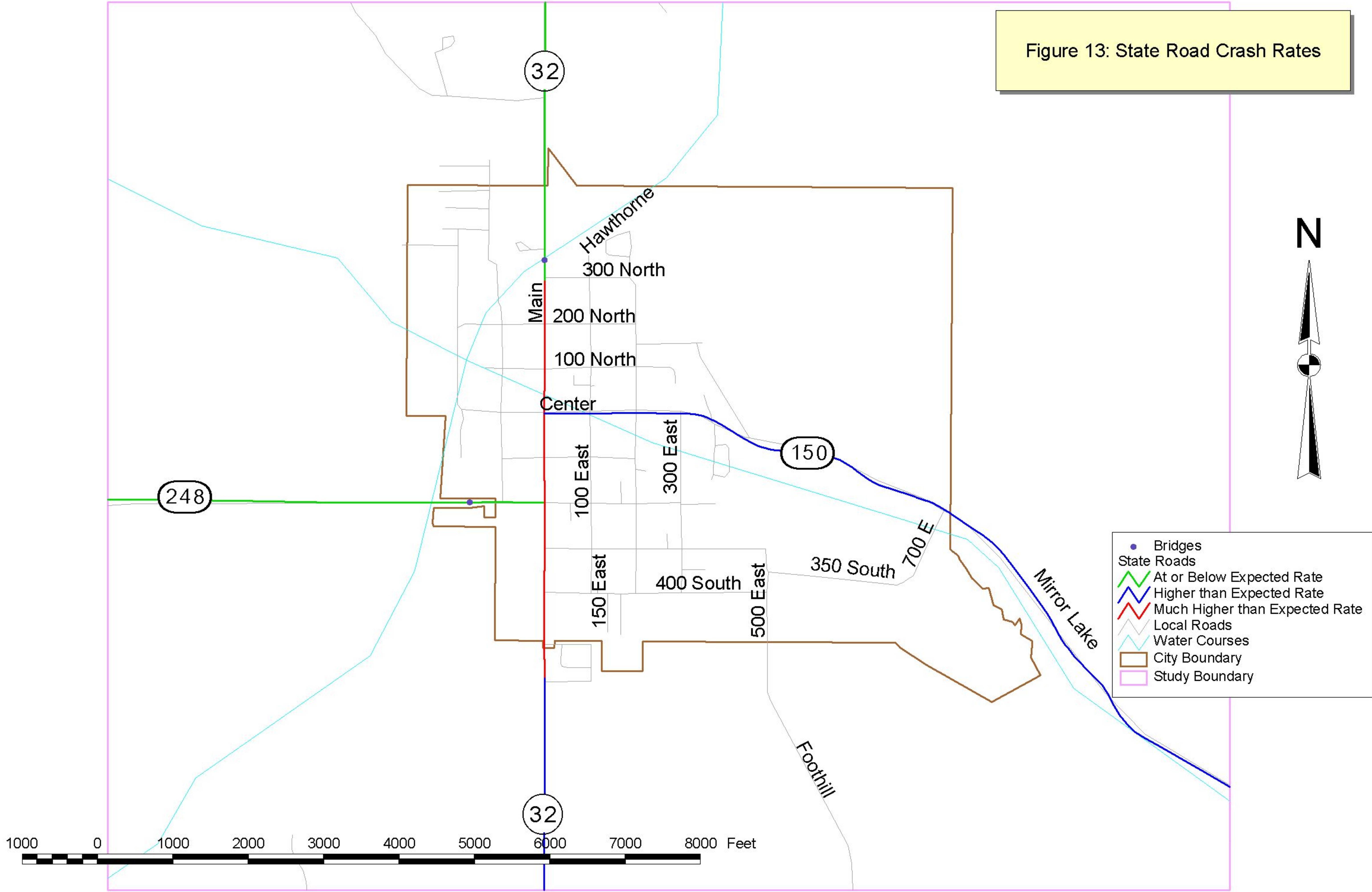
*** Note – Table 3 will be updated for final report.**

Figure 13 State Road Crash Rates

2.8 Bicycle and Pedestrian

The Federal Highway Administration recognizes the increasingly important role of bicycling and walking in creating a balanced, intermodal transportation system, and encourages state and local governments to incorporate all necessary provisions to accommodate bicycle and pedestrian traffic. In following this directive, Kamas City

Figure 13: State Road Crash Rates



is soliciting UDOT's bike and pedestrian planner's help in planning for adoption of a “complete the street” philosophy that allows for the advancement of a transportation system for non-motorized travel.

Kamas City’s General Plan (1998-2003) identifies the importance of traffic circulation as a balance of the movement of goods and people with motorized vehicles, pedestrian facilities, bicycles and other non-motorized traffic, while being sensitive to the built and natural environment. As documented in the Circulation element of the General Plan, Policy 11 states the need to “provide for safe and convenient bicycle and pedestrian movement”.

2.8.1 Biking/Trails – Kamas City has created a Non-Motorized Trails Master Plan document that describes trails locations and construction standards. The Circulation Plan specifies in Policy 27 that “a path should be developed along Beaver Creek”.

The City’s General Plan identifies in Guideline 8 that linear parks/trails/paths should be maintained and expanded along streams, creeks, easements, and rights-of-way. Additionally, Guideline 16 states that a committee to promote park and trail facilities should be established.

2.8.2 Pedestrian – While many areas within the City are equipped with sidewalk, some of these locations pose a safety hazard and are in need of repair. There are also some areas of the City where sidewalk is lacking and need to be addressed for safety concerns and connectivity of the transportation system. The three adjacent school and school recreational facility accesses require a safety study to maximize safe routes to school for children. This study will need to encompass all types of transportation including auto, bus, bicycle, pedestrian and other.

Kamas City’s General Plan declares that all new developments will address pedestrian needs. Pedestrian facilities in each development will be installed by the developer, in a manner agreeable to the Planning Commission and City Council and compatible with the surrounding pedestrian system. Safety of pedestrians shall always be the primary concern of the City in approving pedestrian facilities in new developments.

2.9 Public Transportation

Kamas does not have a fixed route bus system. The local county senior citizen center runs a shuttle program for the senior citizens to help them with their daily needs. As Kamas considers replacement or expansion transit needs of senior and possible future development of an inter or intra community transit system, they will want to contact the UDOT Transit Section staff for addition planning and consultation. UDOT's transit staff is also available to consult regarding access to UDOT's grant process for Transit vehicles and services.

If Kamas City wanted to pursue fixed route transit service, the Utah State Enabling Act also allows for cities or counties to organize transit districts. Once a transit district has been established the city or county can attempt to secure funding to provide transit service or they can vote to be annexed by close transit authority if one exists. There is no intercity public transportation serving Kamas. The nearest scheduled airline service is at the Salt Lake City International Airport, while Amtrak intercity rail passenger service is in both Salt Lake City and Provo. Twice daily Greyhound intercity bus service is provided at nearby Heber City on routes linking the west coast and the Midwest via Heber City and Salt Lake City.

2.10 Freight

Freight transportation in Kamas is provided solely by truck service on the local highways. Although not located on any major freight routes, trucks do make deliveries to local businesses as well lumber mills and gravel quarries in the area. Logs cut in the nearby Uinta Mountains are trucked to two sawmills in Kamas, with finished lumber then being trucked to customers in the Southwest, Midwest and the eastern United States. Log and lumber traffic amounts to about 10 trucks inbound and outbound per week depending on the season.

2.11 Aviation Facilities & Operations

There is no airport in Kamas, with the nearest airport being located in Heber City about ten miles to the southwest.

2.12 Revenue

Maintenance of existing transportation facilities and construction of new facilities come primarily from revenue sources that include the Kamas general fund, federal funds and State Class C funds.

Financing for local transportation projects consists of a combination of federal, state, and local revenues. However, this total is not entirely available for transportation improvement projects, since annual operating and maintenance costs must be deducted from the total revenue. In addition, the City is limited in their ability to subsidize the transportation budget from general fund revenues.

2.12.1 State Class B and C Program

The distribution of Class B and C Program monies is established by state legislation and is administered by the State Department of Transportation. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. Twenty-five percent of the funds derived from the taxes and fees are distributed to cities and counties for construction and maintenance programs.

Class B and C funds are allocated to each city and county by the following formula: 50% based on the population ratio of the local jurisdiction with the population of the State, 50% based on the ratio that the Class B roads weighted mileage within each county and the class C roads weighted mileage within each municipality bear to the total class B and Class C roads weighted mileage within the state. Weighted means the sum of the following: (i) paved roads multiplied by five; (ii) graveled road miles multiplied by two; and (iii) all other road types multiplied by one. (Utah Code 72-2-108) For more information go to UDOT's homepage @ www.udot.utah.gov, tab on "Doing Business" select the tab for "Local Government Assistance" here you will find the Regulations governing Class B&C funds.

The table below identifies the ratio used to determine the amount of B and C funds allocated.

Apportionment Method of Class B and C Funds

Based on	Of
50%	Roadway Mileage *Based on Surface Type Classification (Weighted Measure) Pave Road (X 5) Graveled Road (X 2) Other Road (X 1)
50%	Total Population

Class B and C funds can be used for maintenance and construction of highways, however thirty percent of the funds must be used for construction or maintenance projects that exceed \$40,000. Class B and C funds can also be used for matching federal funds or to pay the principal, interest, premiums, and reserves for issued bonds.

Kamas received \$58,622.76 in 2003 for its Class C fund allocation.

2.12.2 Federal Funds

There are federal monies that are available to cities and counties through federal-aid program. The funds are administered by the Utah Department of Transportation. In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP).

The Surface Transportation Program (STP) provides funding for any road that is functionally classified as a collector street or higher. STP funds can be used for a range of projects including rehabilitation and new construction. The Joint Highway Committee programs a portion of the STP funds for projects around the State for urban areas. A portion of the STP funds can be used in any area of the State, at the discretion of the State Transportation Commission.

Transportation Enhancement funds are allocated based on a competitive application process. The Transportation Enhancement Advisory Committee reviews the applications and then a portion of those are recommended to the State Transportation Commission for funding. Transportation enhancements include 12 categories ranging from historic preservation, bicycle and pedestrian facilities to water runoff mitigation. Other funds that are available are State Trails Funds, administered by the Division of Wildlife Resources.

The amount of money available for projects specifically in the study area varies each year depending on the planned projects in UDOT's Region Two. As a result, federal aid program monies are not listed as part of the study area's transportation revenue.

2.12.3 Local Funds

Kamas, like most cities, has utilized general fund revenues in its transportation program. Other options available to improve the City's transportation facilities could involve some type of bonding arrangement, either through the creation of a redevelopment district or a special improvement district. These districts are organized for the purpose of funding a single, specific project that benefits and identifiable group of properties. Another source is through general obligation bonding arrangements for projects felt to be beneficial to the entire entity issuing the bonds.

2.12.4 Private Sources

Private interests often provide alternative funding for transportation improvements. Developers construct the local streets within the subdivisions and often dedicate right-of-way and participate in the construction of collector or arterial streets adjacent to their developments. Developers can be considered as an alternative source of funds for projects because of the impacts of the development, such as the need for traffic signals or street widening. Developers should be expected to mitigate certain impacts resulting from their developments. The need for improvements, such as traffic signals or street widening can be mitigated through direct construction or impact fees.

3. Future Conditions

3.1. Land Use and Growth

Kamas City's Transportation Master Plan must be responsive to current and future needs of the area. The area's growth must be estimated and incorporated into the evaluation and analysis of future transportation needs. This is done by:

- 1 Forecasting future population, employment, and land use;
- 2 Projecting traffic demand;
- 3 Forecasting roadway travel volumes;
- 4 Evaluating transportation system impacts;
- 5 Documenting transportation system needs; and
- 6 Identifying improvements to meet those needs.



This chapter summarizes the population, employment, and land use projections developed for the project study area. Future traffic volumes for the major roadway segments are based on projections utilizing 20 years of traffic count history. The forecasted traffic data are then used to identify future deficiencies in the transportation system.

3.1.1 Population and Employment Forecasts

The Governor's Office of Planning and Budget develop population and employment projections. The current population and employment levels, as well as the future projections for each are shown for Kamas and Summit County in the following table.

Population and Employment

Year	City	County	
	Population	Population	Employment
2000	1,274	29,736	16,557
2030	3294	60,852	30,867

Source Data: U.S. Bureau of the Census

<http://www.governor.utah./dea/OtherPublications.html>

3.1.2 Future Land Use

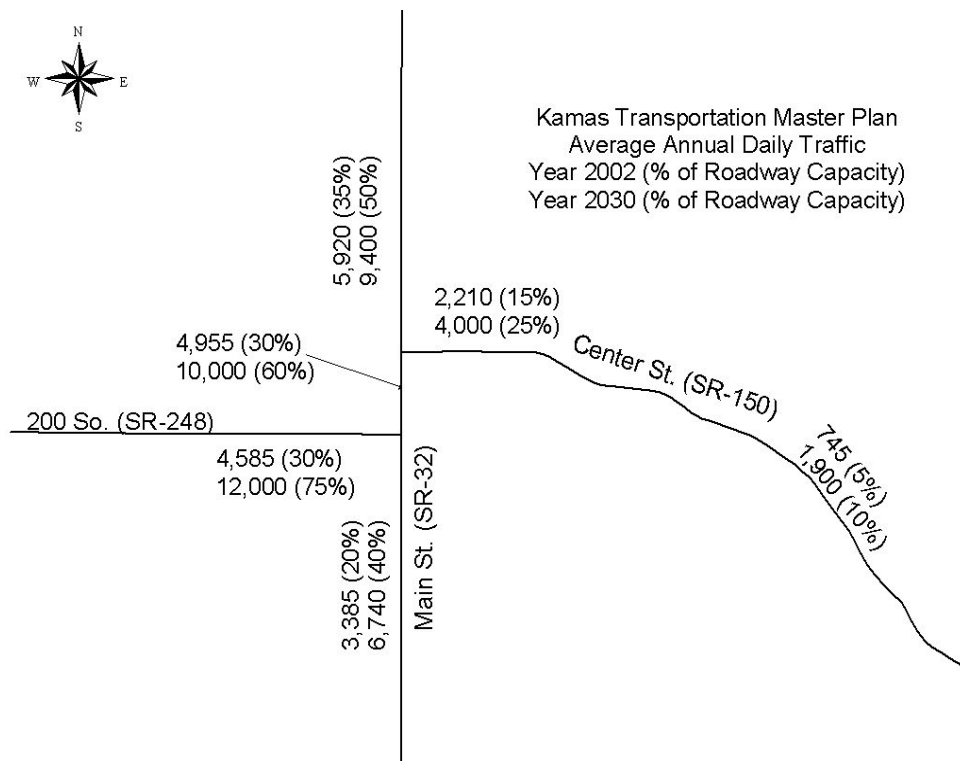
The City has an annexation Proclamation plan that describes where it plans to grow. Some areas for developments were identified during the course of the Transportation Master Plan:

- East of Town west of the Canal
- South Along Foothill Drive
- North along SR-32 toward the town of Marion

While specific development plans change with time, it is important to note possible areas of development within the Kamas City area. Commercial and industrial growth is also important in understanding transportation needs.

3.2 Traffic Forecast

Traffic in the Kamas area is growing and will continue to grow. The following map shows average annual daily traffic for years 2002 and 2030. Also shown is the percentage of the roadway capacity the traffic will reach. From the map below we can see that traffic in Kamas will more nearly triple on SR 248. This is primarily due to the major development plans already underway near Jordanelle Reservoir and the Park City area. Widening SR 248 to a 3-lane cross section could be justified within next 30 years. Main Street traffic will likewise double over the next 30 years, but the existing turn lanes and shoulders through downtown Kamas will service the additional traffic adequately.



4 Transportation Improvement Projects

4.1 Current Statewide Transportation Improvement Program (STIP)

At the present time there are a several projects listed on the current (2004-2008) Statewide Transportation Improvement Program: Bridge and Road Improvements along Mirror Lake Highway, Bicycle/Pedestrian Path Enhancements from Oakley to Kamas Path and along the Historic UP Rail Path just to name a few projects.

4.2 Recommended Projects

The following list identifies the eight projects that have been identified as having the highest priority to the Kamas Transportation Advisory Committee. These needs were identified through a series of meetings where the TAC identified the needs and set priorities for projects.

1. Roadway & Sidewalk Improvement along 200 South from Main Street to 350 East.
2. Roadway Widening and Bridge Improvement along 200 West from 200 North to Center Street.
3. New Connector Street in the Grassy Creek Subdivision.
4. Roadway Widening and Improvement along 200 East from 400 North around Hawthorne Street.
5. The addition of Shoulders along SR-32 from Kamas to Oakley.
6. Improvements to Main Street Sidewalks from 300 North to 600 South.
7. Improvements to Drainage in front of the Fire Station.
8. Conduct Storm water Master Plan Study for the entire city of Kamas.

Additionally, many concerns and issues were identified which are found on the attached list.



Kamas Area Transportation Needs and Cost Estimates

Location			Segment Length (ft)	Project Cost	Total Cost
Roadway	From	To			
Center Street Widening / Bridge	200 West	Main Street	1,500	\$375,000	\$375,000
Foothill Drive Widening	400 South		1,500	\$75,000	\$75,000
Grassy Creek Subdivision New Road			2,000	\$130,000	\$130,000
Gristmill Road Widening / Bridge	SR-150	500 East	2,000	\$375,000	\$375,000
SR-32 crown of road north & south of Town	Marion	Oakley	16,000	\$1,500,000	\$1,500,000
610 South reconstruction	Main Street	100 East	1,000	\$100,000	\$100,000
100 South New Road	100 West	200 West	1,000	\$75,000	\$75,000
200 South Widen / Foot Path	Main Street	350 East	2,500	\$125,000	\$125,000
100 North New Road	100 West	200 West	1,000	\$75,000	\$75,000
100 North New Road	Main Street	300 East	2,500	\$200,000	\$200,000
200 North Widen / Bridge	100 West	200 West	1,000	\$350,000	\$350,000
400 East New Road	300 South	400 South	1,000	\$75,000	\$75,000
200 East Widen Road	400 North	Hawthorne	2,500	\$135,000	\$135,000
200 West Widen / Bridge	200 North	Center	2,500	\$420,000	\$420,000
SR-248 Connection New Road	West of Canal	SR-248	7,000	\$350,000	\$350,000
Safety Projects					
SR-32 Shoulders north of town	Kamas	Oakley	30,000	\$4,600,000	\$4,600,000
Safety Study - Safe Routes to School				\$25,000	\$25,000
Speed Study / Review	SR-32			\$25,000	\$25,000
SR-32 / SR-150 signal pre-emption				\$7,500	\$7,500
Bike / Pedestrian Improvements					
Main Street Sidewalks	300 North	600 South	5,500	\$610,000	\$610,000
SR-32 Bike path	Francis	Oakley	40,000	\$300,000	\$300,000
Bicycle signing on Utah Highways				\$50,000	\$50,000
Bike / Pedestrian access to Rec. Center Study				\$50,000	\$50,000
100 North Sidewalks	Main Street	200 East	2,000	\$230,000	\$230,000
OHV Trail	Francis	Oakley	40,000	\$150,000	\$150,000
Drainage					
SR-32 Drainage in front of fire station				\$30,000	\$30,000
SR-32 Drainage at 60 North				\$150,000	\$150,000
Storm water Master Plan Study				\$75,000	\$75,000
Other					
SR-32 Angle parking study				\$25,000	\$25,000
Raise All west Communications utility box at SR-32 / SR-248				\$5,000	\$5,000

**TOTAL
COST**

\$10,692,500

4.3.1 Federal and State Participation

Federal and State participation is important for the success of implementing these projects. UDOT needs to see the Transportation Master Plan so that they understand what the City wants to do with its transportation system. UDOT can then weigh the priorities of the city against the rest of the state. It is important for Kamas to promote projects that can be placed on UDOT's five-year Statewide Transportation Improvement Program (STIP) as soon as possible. Coordination with UDOT's Planning office, and Region Director will be practical.

4.3.2 City Participation

The City will fund the local Kamas projects. The local match component and partnering opportunities vary by the funding source.

4.4 Other Potential Funding

Previous sections of this chapter show significant shortfalls projected for the short-range and long-range programs. The following options may be available to help offset all or part of the anticipated shortfalls:

- 1** Increased transportation impact fees.
- 2** Increased general fund allocation to transportation projects.
- 3** General obligation bonds repaid with property tax levies.
- 4** Increased participation by developers, including cooperative programs and incentives.
- 5** Special improvement districts (SIDs), whereby adjacent property owners are assessed portions of the project cost.
- 6** Sales or other tax increase.
- 7** State funding for improvements on the county roadway system.
- 8** Increased gas tax, which would have to be approved by the State Legislature.
- 9** Federal-aid available under one of the programs provided in the federal transportation bill (TEA-21 is the current bill; SAFETEA will likely be passed in late 2004).

Increased general fund allocation means that General Funds must be diverted from other governmental services and/or programs. General obligation bonds provide initial capital for transportation improvement projects but add to the debt service of the governmental agency. One way to avoid increased taxes needed to retire the debt is to sell bonds repaid with a portion of the municipalities' State Class monies for a certain number of years.

Participation by private developers provides a promising funding mechanism for new projects. Developers can contribute to transportation projects by constructing on-site improvements along their site frontage and by paying development fees. Municipalities commonly require developers to dedicate right-of-way and widen

streets along the site frontage. A negative side of the on-site improvements is that the streets are improved in pieces. If there are not several developers adjacent to one another at the same time, a continuous improved road is not provided. One way to overcome this problem is for the jurisdiction to construct the street and charge the developers their share when they develop their property.

Another way developers can participate is through development fees. The fees would be based on the additional improvements required to accommodate the new development and would be proportioned among each development. The expenditure of additional funds provided by the fees would be subject to the City's spending limit. However, development fees are often a controversial issue and may or may not be an appropriate method of funding projects.

5 Planning Issues and Guidelines

Provided below is a discussion of various issues with a focus on elements that promote a safe and efficient transportation system in the future.

5.1 Guidelines and Policies

These guidelines address certain areas of concern that are applicable to Kamas's Transportation Master Plan.

5.1.1 Access Management

This section will define and describe some of the aspects of Access Management for roadways and why it is so important. Access Management can make many of the roads in a system work better and operate more safely if properly implemented. There are many benefits to properly implemented access management. Some of the benefits follow:

- 1 Reduction in traffic conflicts and accidents
- 2 Reduced traffic congestion
- 3 Preservation of traffic capacity and level of service
- 4 Improved economic benefits businesses and service agencies
- 5 Potential reductions in air pollution from vehicle exhausts

5.1.1.1 Definition

Access management is the process of comprehensive application of traffic engineering techniques in a manner that seeks to optimize highway system performance in terms of safety, capacity, and speed. Access Management is one tool of many that makes a traffic system work better with what is available.

5.1.1.2 Access Management Techniques

There are many techniques that can be used in access management. The most common techniques are signal spacing, street spacing, access spacing, and interchange to crossroad access spacing. There are various distances for each spacing, dependant upon the roadway type being accessed and the accessing roadway. UDOT has developed an access management program and more information can be gathered from the UDOT website and from the Access Management Program Coordinator.

5.1.1.3 Where to Use Access Management

Access Management can be used on any roadway. In some cases, such as State Highways, access management is a requirement. Access management

can be used as an inexpensive way to improve performance on a major roadway that is increasing in volume. Access management should be used on new roadways and roadways that are to be improved so as to prolong the usefulness of the roadway.

5.1.2 Context Sensitive Solutions

Context Sensitive Solutions (CSS) addresses the need, purpose, safety and service of a transportation project, as well as the protection of scenic, aesthetic, historic, environmental and other community values. CSS is an approach to transportation solutions that find, recognize and incorporate issues/factors that are part of the larger context such as the physical, social, economic, political and cultural impacts. When this approach is used in a project the project become better for all of the entities involved.

5.1.3 Recommended Roadway Cross Sections

The General Plan for Kamas includes a section named “Circulation Element.” This section of the General Plan covers how Kamas wants to treat the transportation needs in the city itself. Issues such as environment, safety, facility classification, and right-of way protection and acquisition are addressed here. The goal of the circulation plan is outlined with 27 policies implemented to obtain that goal.

There are no guidelines in the General Plan for Kamas for roadway cross sections. The following paragraphs provide additional discussion on cross-sections.

Cross sections are the combination of the individual design elements that constitute the design of the roadway. Cross section elements include the pavement surface for driving and parking lanes, curb and gutter, sidewalks and additional buffer/landscape areas. Right-of-way is the total land area needed to provide for the cross section elements.

The design of the individual roadway elements depends on the intended use of the facility. Roads with higher design volumes and speeds need more travel lanes and wider right-of-way than low volume, low speed roads. The high use roadway type should include wider shoulders and medians, separate turn lanes, dedicated bicycle lanes, elimination of on street parking, and control of driveway access. For most roadways, an additional buffer area is provided beyond the curb line. This buffer area accommodates the sidewalk area, landscaping, and local utilities. Locating the utilities outside the traveled way minimizes traffic disruption in utility repairs or changes in service are needed.

Federal Highway standard widths apply on the all roads that are part of the state highway system. Also, all federally funded roadways in Kamas and Summit County must adhere to the same standards for widths and design.

5.2 Bicycles and Pedestrians

5.2.1 Bicycles/Trails

Bicycles are allowed on all roadways, except where legally prohibited, and as such should be a consideration on all roads that are being designed and constructed, and as roadway improvements are taking place. The City should encourage developers to include separate bicycle/pedestrian pathways in all new developments. In following the City's General Plan, private development will participate in park and trail development through park impact fees, dedication of land, and construction of facilities. Opportunities to include bike lanes and increased shoulder width in conjunction with a roadway project should be taken whenever technically, environmentally, and financially feasible.

It is important to note that regardless of the system's function, as the bike/trail facilities are planned, designed and constructed, the City should review the connectivity of the trails systems and needs within the area. With input from the community, a review of the connectivity of the trails systems should play an integral role in the decision making process for potential projects. In order to provide for a better quality of life for those in the community, the trails should be accessible to all users and incorporate ADA requirements.

The Kamas City General Plan, Guideline 13 encourages the close cooperation between the City, public and private schools, public agencies, community groups, volunteer organizations, business and industry in the provision of recreational services. The City is encouraged to foster these partnerships and implement the trails identified in the master plan, thereby benefiting all in the community.

Trails, when constructed, may have slight variances in application type due to possible differences in the terrain at a specific trail location or differing user needs. However, regardless of the design type, the applicable design standards found in the latest version of the AASHTO Guide for the Development of Bicycle Facilities should be followed, as well as the Manual on Uniform Traffic Control Devices (MUTCD) guidelines for appropriate signage of the trails system.

5.2.2 Pedestrians

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facilities are planned, designed and constructed, the City should review the connectivity of the trails systems and needs within the area. With input from the community, a review of the connectivity of the trails systems should play an integral role in the decision making process for potential projects. In order to provide for a better quality of life for those in the community, the trails should be accessible to all users and incorporate ADA requirements.

5.3. Enhancements Program

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) created the Transportation Enhancement program. The program has since been reauthorized in subsequent bills (i.e. TEA-21). The Transportation Enhancement program provides opportunities to use federal dollars to enhance the cultural and environmental value of the transportation system. These transportation enhancements are defined as follows by TEA-21:

The term ‘transportation enhancement activities’ means, with respect to any project or the area to be served by the project, any of the following activities if such activity relates to surface transportation: provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists, acquisition of scenic easements and scenic or historic sites, scenic or historic highway programs (including the provision of tourist and welcome center facilities), landscaping and other scenic beautification, historic preservation, rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals), preservation of abandoned railway corridors (including the conservation and use thereof for pedestrian or bicycle trails), control and removal of outdoor advertising, archeological planning and research, environmental mitigation to address water pollution due to highway runoff or reduce vehicle caused wildlife mortality while maintaining habitat connectivity, and establishment of transportation museums.

The Utah Transportation Commission, with the help of an advisory committee, decides which projects will be programmed and placed on the Statewide Transportation Improvement Program (STIP). Applications are accepted in an annual cycle for the limited funds available to UDOT for such projects. Applications for the current cycle are due in January 2004.

5.4. Transportation Corridor Preservation

Transportation Corridor Preservation will be introduced as a method of helping Kamas’s Transportation Master Plan. This section will define what Corridor Preservation is and ways to use it to help the Transportation Master Plan succeed for the City.

5.4.1. Definition

Transportation Corridor Preservation is the reserving of land for use in building roadways that will function now and can be expanded at a later date. It is a planning tool that will reduce future hardships on the public and the city. The land along the corridor is protected for building the roadway and maintaining the right-of-way for future expansion by a variety of methods, some of which will be discussed here.

5.4.2. Corridor Preservation Techniques

There are three main ways that a transportation corridor can be preserved. The three ways are acquisition, police powers, and voluntary agreements and government inducements. Under each of these are many sub-categories. The main methods will be discussed here, with a listing of some of the sub-categories.

5.4.2.1 Acquisition

One way to preserve a transportation corridor is to acquire the property outright. The property acquired can be developed or undeveloped. When the city is able to acquire undeveloped property, the city has the ability to build without greatly impacting the public. On the other hand, acquiring developed land can be very expensive and can create a negative image for the City. Acquisition of land should be the last resort in any of the cases for Transportation Corridor Preservation. The following is a list of some ways that land can be acquired.

- 1 Development Easements
- 2 Public Land Exchanges
- 3 Private Land Trusts
- 4 Advance Purchase and Eminent Domain
- 5 Hardship Acquisition
- 6 Purchase Options

5.4.2.2 Exercise of Police Powers

Police powers are those ordinances that are enacted by a municipality in order to control some of the aspects of the community. There are ordinances that can be helpful in preserving corridors for the Transportation Master Plan. Many of the ordinances that can be used for corridor preservation are for future developments in the community. These can be controversial, but can be initially less intrusive.

- 1 Impact Fees and Exactions
- 2 Setback Ordinances
- 3 Official Maps or Maps of Reservation
- 4 Adequate Public Facilities and Concurrency Requirements

5.4.2.3 Voluntary Agreements and Governmental Inducements

Voluntary agreements and governmental inducements rely on the good will of both the developers and the municipality. Many times it is a give and take situation where both parties could benefit in the end. The developer will likely have a better-developed area and the municipality will be able to preserve the corridor for transportation in and around the development. Listed below are some of the voluntary agreements and governmental inducements that can be used in order to preserve transportation corridors in the city limits.

- 1 Voluntary Platting
- 2 Transfer of Development Rights
- 3 Tax Abatement
- 4 Agricultural Zoning

Each of these methods has its place, but there is an order that any government should try to use. Voluntary agreements and government inducements should be used, if possible, before any police powers are used. Police powers should be tried before acquisition is sought. UDOT has developed a toolkit to aid in corridor preservation techniques. This toolkit contains references to Utah code and examples of how the techniques have been used in the past.